SHOREHAM HOTEL
H STREET NORTHWEST AT FIFTEENTH
Washington

Nils A. Riffolt

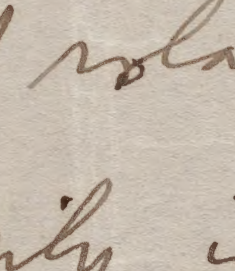
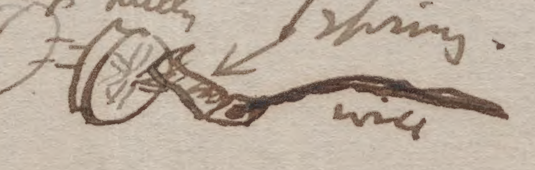
July 16, 1922

Dear Mr. Riffolt:

Thank you for letting me know how things are going. I finished up quicker than I expected, and will only be held in Washington a short while before returning.

It looks as if we shall have to try pulleys, to get enough speed, and for this reason it will perhaps be best not to try out the turbine just yet until we see how things go. (Looks as if we should need considerable time on this work this summer, doesn't it?)

It is interesting to know that the rotary pump can go up to 110 lbs/in², and I suppose such a pressure as this could be used if the losses were rather moderate, at high speeds. In the mean time it is a good scheme to go ahead with the piston pump, as you suggest.

It seems to me as if the speed of rotation could be got accurately, and comparatively easily in this way:—
Suppose that on the pulley, on the pump, there are 6 or 8 narrow strips of copper, like the points of a star, ; it could all be made of one piece, and each could be narrower than this; and suppose there is a spring, making contact, just as a brush on a motor would [].

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If a wire was also connected to the pump, and the circuit completed through a battery 4 or 6 volts, and a telephone, a note of 300 or 400 vibrations per second would be had with 3000 r.p.m., and by getting the same note on the old monochord, and finding the ratio between the length of wire for this, and the length for 256 (middle C) the revolutions could be got fairly accurately, and it would be certain that this was the speed during the actual run. This is important, as the pump speed will probably vary with the load. Also the method is applicable for very much higher speeds, by reducing the number of contact arms on the pulley. At any rate, it is simple, and worth thinking over.

It looks to me as if we ought to put in quite a little time from now until school opens, on this work, even if we have to make special arrangements with Dr. Webster on the manufacture of sound apparatus, for we really ought to know something definite before cold weather sets in.

Best regards,

Sincerely,

R. H. Goddard

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